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Appellant submits this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2621 dated May 17, 2006, finally rejecting claims 1-4, 6-17, 19 and 20.

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**Real Party in Interest**

The real party in interest is Thomson Licensing.

**Related Appeals and Interferences**

Appellant asserts that no other appeals or interferences are known to the Appellant, the Appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **Status of Claims**

Claims 1-20 were originally presented with the filed application. Subsequently claims 1, 12 and 20 were amended in a Preliminary amendment submitted with an RCE on December 29, 2005. Subsequently, claims 5 and 18 were cancelled and claims 1 and 12 were amended in amendment submitted on February 28, 2006. Claims 1-4, 6-17 and 19 stand finally rejected under 35 U.S.C. § 112 first paragraph as failing to comply with the written description requirement. In addition, claims 1-3, 6-17, 19 and 20 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanaka (US Patent No. 5,764,847) in view of Sato et al. (US Patent No. 5,566,174). Finally, claim 4 stands finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanaka (US Patent No. 5,764,847) and Sato et al. (US Patent No. 5,566,174) and further in view of Campbell et al. (US Patent No. 4,967,271).

### **Status of Amendments**

A first response was filed on June 24, 2005 to overcome a First Office Action dated March 24, 2005. In the First Office Action, the Examiner rejected the Appellant's claims 1-3, 6-7, 12-17 and 19 under 35 U.S.C. § 102(b) as being anticipated by Tanaka (US Patent No. 5,764,847). The Examiner also rejected the Appellant's claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Campbell et al. (US Patent No. 4,967,271). The Examiner further rejected the Appellant's claims 5, 18 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Sato et al. (US Patent No. 5,566,174). Lastly the Examiner rejected the Appellant's claims 8-9 and 10-11 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka. In the response filed on June 24, 2005, the Appellant set forth arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

A second response was filed on December 08, 2006 to overcome a Final Office Action dated September 21, 2005. In the Final Office Action, the Examiner again rejected the Appellant's claims 1-3, 6-7, 12-17 and 19 under 35 U.S.C. § 102(b) as being anticipated by Tanaka (US Patent No. 5,764,847), and rejected the Appellant's claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Campbell et al. (US Patent No. 4,967,271) and rejected the Appellant's claims 5, 18 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Sato et al. (US Patent No. 5,566,174) and lastly rejected the Appellant's claims 8-9 and 10-11 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka. In the response filed on December 08, 2006, the Appellant amended claims 1, 12 and 20 and set forth arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

The Examiner responded to the Appellant's response of December 08, 2006 with an Advisory Action dated December 21, 2006. In the Advisory Action, the Examiner indicated that the proposed after final amendments would not be entered because they raise new issues that would require further consideration and/or search. In response to the Advisory Action, the Appellant filed a Request for Continued Examination on December 29, 2006 and a corresponding Preliminary

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Amendment amending claims 1, 12 and 20 and setting forth arguments traversing the rejections issued by the Examiner in the Final Office Action and distinguishing the Appellant's invention over the cited prior art.

The Examiner responded to the Appellant's RCE and Preliminary Amendment with an Office Action dated January 24, 2006. In the Office Action, the Examiner reiterated the rejections of the previous Final Office Action. In response to the Office Action dated January 24, 2006, the Appellant filed a response dated February 28, 2006. In the response filed on February 28, 2006, the Appellant amended claims 1, and 12, cancelled claims 5 and 18 and set forth arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

The Examiner responded to the Appellant's response dated February 28, 2006 with a Final Office Action dated May 17, 2006. In the Final Office Action, the Examiner rejected the Appellant's claims 1-4, 6-17 and 19 under 35 U.S.C. § 112 first paragraph as failing to comply with the written description requirement. The Examiner further rejected the Appellant's claims 1-3, 6-17, 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka (US Patent No. 5,764,847) in view of Sato et al. (US Patent No. 5,566,174) and claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka (US Patent No. 5,764,847) and Sato et al. (US Patent No. 5,566,174) and further in view of Campbell et al. (US Patent No. 4,967,271). In response to the Final Office Action dated May 17, 2006, the Appellant filed a response dated August 02, 2006. In the response filed on August 02, 2006, the Appellant pointed to specific language in the Appellant's Specification for fulfilling the written description requirement for at least claims 1-4, 6-17 and 19 and set forth arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

The Examiner responded to the Appellant's response dated August 02, 2006 with an Advisory Action dated August 18, 2006. In the Advisory Action, the Examiner stated that the request for reconsideration has been considered but does NOT place the application in condition for allowance because all arguments fail to be

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persuasive. In response to the Advisory Action dated August 18, 2006, the Appellant submitted a Notice of Appeal dated September 11, 2006.

The claims on appeal are those of the Appellant's response filed on February 28, 2006. That is, the claims on appeal are the Appellant's claims 1-4, 6-17, 19 and 20, which are listed in the attached Appendix.



### **Summary of Claimed Subject Matter**

The invention of the Appellant provides a method and system for recording multiple programs onto a storage medium. More specifically, a plurality of multimedia inputs can be received, and these inputs can be sampled such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs. These sampled multimedia inputs can then be combined and encoded such that the number of encoding devices required to encode the sampled multimedia inputs is less than the number of the plurality of multimedia inputs or alternatively, less than the number of sampling devices used to sample the plurality of multimedia inputs. For example, in one embodiment, a method for recording multiple programs onto a storage medium includes receiving a plurality of multimedia inputs, each having at least one respective, different program, sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs, providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency, combining the sampled multimedia inputs and the dummy input signal, and encoding the combined multimedia inputs such that the number of encoding devices required to encode the combined multimedia inputs is less than the number of the plurality of programs.

In an alternate embodiment of the Appellant's invention, a system for encoding a plurality of multimedia input signals having multiple programs includes at least one sampler for sampling the multimedia input signals such that the sampled multimedia input signals contain a portion of the plurality of multimedia input signals, each of the multimedia input signals having at least one respective, different program therein, a dummy signal generator for providing at least one dummy input signal to be combined with at least one of the sampled multimedia inputs to improve encoding efficiency, a combiner for combining the sampled multimedia input signals and the at least one dummy input signal, and at least one encoder for encoding the combined multimedia input signals, such that the number of encoders is less than the plurality of programs. The system of the Appellant's invention can further include a decoder for decoding at least one of the encoded sampled multimedia inputs to provide a

decoded signal and a processor for processing the decoded signal to enable the display of at least one of the multimedia inputs.

As suggested in MPEP 1206, the Appellant now reads at least two of the broadest appealed claims on the specification and on the drawings. It should be understood, however, that the appealed claims may read on other portions of the specification or other figures that are not listed below.

With regards to a first embodiment, the Appellant's Specification specifically refers to FIG. 1 for teaching an embodiment of a system 100 for implementing the various advanced operating features of the Appellant's inventive arrangements. With reference to FIG. 1, the Appellant teaches that a system 100 can include an encoding path 110 for receiving and processing multimedia inputs for purposes of storing the inputs onto a storage medium (not shown). In addition, the system can include a decoding path 112 for receiving and processing multimedia data read from the storage medium. In one arrangement, these multimedia inputs and the multimedia data read from the storage medium can contain video, audio or a combination thereof.

The Appellant further describes that the encoding path 110 can include one or more samplers 114 for sampling a corresponding number of video signals. The sampled video signals can then be fed to a video combiner 116, which can combine or merge these sampled video signals. The Appellant teaches that subsequently, these signals can be encoded by the video encoder 118 and then transferred to a multiplexer 120. The encoding path 110 can also contain one or more samplers in the form of downmixers 122 for sampling or downmixing a corresponding number of audio signals. The downmixed audio signals can then be sent to an audio combiner 123, which can combine the downmixed audio signals. These downmixed audio signals can then be encoded by an audio encoder 124 and transferred to the multiplexer 120, which can multiplex the audio and video signals. The Appellant's Specification teaches that these signals can then be sent to a controller (not shown) for purposes of recording the signals onto a storage medium. It is further taught that the encoding path 110 can also include a dummy program generator 140 for

generating one or more dummy programs, which can then be combined with one or more of the incoming sampled video signals.

When referring to the decoding path 112, the Appellant teaches that a demultiplexer 126 can receive and demultiplex the multimedia data read from the storage medium. In addition, in one arrangement, if the multimedia data contains video, the video can be decoded by a video decoder 128 and then sent to a video selector 130. The video can then be processed by a video display processor 132 and then forwarded to, for example, a display device (not shown). The video display processor 132 of the Appellant's invention can be used to upconvert or improve the picture quality of the decoded video signals prior to their display. In one arrangement, the video display processor 132 can be a line doubler; however, any other known device capable of improving picture quality can be used.

The Appellant teaches that if the multimedia data contains audio, the audio can be decoded by an audio decoder 134 and then transferred to an audio selector 136. Subsequently, the audio can then be sent to the display device as well. In another taught arrangement, the decoding path 112 can also include a program selector 138 with control interfaces connected to the video selector 130 and the audio selector. The program selector 138 can permit a user to choose between any of the video or audio signals read from the storage medium, as a plurality of these signals may be recorded onto the storage medium during the receiving and encoding steps performed in the encoding path 110. Only those signals selected by the user through the program selector 138 for display are permitted to pass through the video selector 130 and/or the audio selector 136.

Furthermore, and with regards to at least a second embodiment of the Appellant's invention, the Appellant refers to FIG. 2. More specifically, the embodiment of FIG. 2 illustrates a flowchart 200 that demonstrates one way in which multiple programs can be recorded onto a storage medium using a reduced number or a minimum number of encoding devices. In a first step (step 210), a plurality of multimedia inputs can be received. These multimedia inputs can be audio signals, video signals or a combination thereof. Moreover, the invention can receive any number of multimedia inputs.

In a subsequent step (step 212), these multimedia inputs can be sampled such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs. For example, the resolution of the pictures contained in each of the plurality of multimedia inputs that are sampled can be less than the resolution of the pictures contained in each input prior to the sampling process. A number of sampling techniques can be employed to perform this step. As an example, if video is being received, then the resolution of the video signal can be reduced by removing lines of resolution or by removing pixels from the pictures contained in the video signals. If audio is being received, then each audio signal can be sampled or down-mixed by removing one or more channels of audio contained in each of the audio signals. The Appellant submits however, that the invention is not limited to any particular sampling technique, as any other suitable technique known in the art can be used to sample the incoming multimedia inputs.

In one example of a sampling process, the Appellant refers to an instance when two D1 video signals can be received. The Appellant describes the D1 signals as video signals with a picture resolution of 720 X 480, the signals being converted by sampling to 1/2 D1 video signals, *i.e.*, video signals with a picture resolution of 352 X 480. As a result, each of the sampled 1/2 D1 signals contain a portion of its original, corresponding D1 video signal.

In another example, the Appellant teaches that D1 signals can be sampled down to 1/4 D1 signals or standard input format (SIF) signals with a picture resolution of 352 X 240. The Appellant further notes that any number of incoming video signals can be sampled down to any suitable resolution or picture size.

For example, as another example, two separate audio signals can be received in which each audio signal contains four channels of audio. These incoming audio signals can be sampled or downmixed to audio signals containing only two channels of audio, *i.e.*, each audio signal is now a stereo signal. In yet another example, the Appellant teaches that incoming four channel audio signals can be down-mixed to audio signals containing only one channel of audio, *i.e.*, each audio signal now being a mono signal.

In the invention of the Appellant, once the multimedia inputs have been suitably sampled, the sampled inputs can be combined (step 214). For example, if two D1 signals have been received and sampled down to 1/2 D1 signals, these signals can be combined to create a signal that contains the same number of resolution lines as that typically carried in a full D1 signal. Similarly, if two separate four channel audio signals have been downmixed to two separate stereo signals, then these stereo signals can be combined to create a four channel audio signal. The Appellant teaches that in one arrangement, a dummy program signal can be generated, which can then be combined with one or more of the incoming sampled video signals to produce a combination of sampled signals in which the combined resolution of the combined signals - including the dummy signal - is equal to that of a D1 signal. That is, a dummy program signal can be a video signal that contains no programming, *i.e.*, a blank picture. As an example, if three D1 signals are received, it may be desired to sample these signals down to 1/4 D1 signals, as the 1/4 D1 format is a conventional format. Notably, however, if three D1 signals are received and sampled down to 1/4 D1, the combined lines of resolution do not equal that of a full D1 signal. Significantly, many video encoders operate more efficiently on video signals with the resolution in a D1 signal. Thus, it may be useful to combine a dummy program signal to the 1/4 D1 signals to enable the encoder to operate more efficiently. The Appellant recites that the invention is not limited to the particular example, as a dummy program signal can be added to any suitable number of sampled video signals for purposes of improving video encoder performance.

Once the multimedia inputs are properly sampled, the inputs can be encoded (step 216). Notably, as the incoming multimedia inputs have been sampled, the number of encoding devices required to encode these sampled signals is less than the number of the original multimedia inputs. For example, if a conventional storage medium device receives two separate D1 video signals, then the storage medium device requires two separate video encoders to encode the D1 signals simultaneously. Likewise, if two separate four channel audio signals are received, then the storage medium device requires two separate audio encoders to encode the two separate four channel audio signals.

In accordance with the Appellant's inventive arrangements, however, sampling the incoming multimedia inputs reduces the number of encoders normally required to encode the multimedia inputs. As an example, if two D1 video signals are sampled down to 1/2 D1 signals and then combined, then only one video encoder is needed to encode both of these signals simultaneously. This reduces the number of encoders required to perform such a process from two to one. Further, if four D1 video signals are sampled down to four 1/4 D1 signals and combined, then, again, only one video encoder is needed to encode these 1/4 D1 signals.

In another example, the Appellant teaches that if two audio signals each with four channels of audio are downmixed to stereo signals and combined, then only one four channel audio encoder is required to encode the downmixed signals simultaneously. Also, if four audio signals each with four channels of audio are downmixed to mono signals and combined, then only one four channel audio encoder is needed to encode the downmixed audio signals. As a result, the number of encoders required to encode the sampled multimedia inputs is less than the number of encoders typically required to encode the originally received multimedia inputs and is thus less than the number of multimedia inputs actually received.

In one taught embodiment of the Appellant's invention, once the sampled multimedia inputs have been encoded, the sampled inputs can then be recorded onto a storage medium (step 218). A determination can then be made as to whether these sampled multimedia inputs can then be played back.

For the convenience of the Board of Patent Appeals and Interferences, Appellant's pending claims are presented below in claim format with elements read on the drawings and appropriate citations to at least one portion of the specification for each element of the appealed claims (with reference numerals added).

Claim 1 positively recites (with reference numerals added, where applicable):

1. A method of recording multiple programs onto a storage medium, comprising the steps of:  
receiving (210) a plurality of multimedia inputs, each having at least one respective, different program therein;

sampling (212) the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs;  
providing (pg. 9, lines 8-22) at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency;  
combining (214) the sampled multimedia inputs and said at least one dummy input signal; and  
encoding (216) the combined multimedia inputs such that the number of encoding devices required to encode the combined multimedia inputs is less than the number of the plurality of programs. (See Appellant's specification, page 7, line 9 through page 10, line 7).

Claim 2 positively recites:

2. The method according to claim 1, further comprising the step of playing back (220-228) the sampled multimedia inputs. (See Appellant's specification, page 11, lines 6-22).

Claim 3 positively recites:

3. The method according to claim 2, wherein said playing back step further comprises the steps of:  
decoding (226) at least one of the encoded sampled multimedia inputs to provide a decoded signal; and  
processing (228) the decoded signal to enable the display of at least one of the multimedia inputs. (See Appellant's specification, page 7, lines 7-12; page 12, line 23 through page 13, line 6).

Claim 4 positively recites:

4. The method according to claim 3, wherein said processing step further comprises the step of upconverting (228) at least one of the sampled multimedia inputs. (See Appellant's specification, page 11, line 23 through page 12, line 3).

Claim 5 (Cancelled).

Claim 6 positively recites:

6. The method according to claim 1, wherein the plurality of multimedia inputs contain multimedia data selected from the group comprising

video, audio or a combination thereof. (See Appellant's specification, page 5, lines 4-6).

Claim 7 positively recites:

7. The method according to claim 1, wherein each of the plurality of multimedia inputs contain audio and video. (See Appellant's specification, page 3, lines 1-2).

Claim 8 positively recites:

8. The method according to claim 6, wherein the multimedia inputs containing video include a D1 video signal and said sampling step further comprises the step of sampling the D1 video signal to a one-half D1 video signal. (See Appellant's specification, page 3, lines 3-5; and page 8, lines 5-10).

Claim 9 positively recites:

9. The method according to claim 6, wherein the multimedia inputs containing video include a D1 video signal and said sampling step further comprises the step of sampling the D1 video signal to an SIF video signal. (See Appellant's specification, page 3, lines 5-7; and page 8, lines 10-11).

Claim 10 positively recites:

10. The method according to claim 6, wherein the multimedia inputs containing audio include an audio signal with more than two channels of audio and said sampling step further comprises the step sampling the audio signal to a stereo signal. (See Appellant's specification, page 3, lines 7-10; and page 8, lines 16-19).

Claim 11 positively recites:

11. The method according to claim 6, wherein the multimedia inputs containing audio include an audio signal with more than two channels of audio and said sampling step further comprises the step sampling the audio signal to a mono signal. (See Appellant's specification, page 3, lines 10-13; and page 8, lines 19-21).



Claim 12 positively recites:

12. A system for encoding a plurality of multimedia input signals having multiple programs, comprising:  
at least one sampler (114) for sampling the multimedia input signals such that the sampled multimedia input signals contain a portion of the plurality of multimedia input signals, each of said multimedia input signals having at least one respective, different program therein;  
a dummy signal generator (140) for providing at least one dummy input signal to be combined with at least one of the sampled multimedia inputs to improve encoding efficiency;  
a combiner (116, 123) for combining the sampled multimedia input signals and said at least one dummy input signal; and  
at least one encoder (118, 124) for encoding the combined multimedia input signals, wherein the number of encoders is less than the plurality of programs. (See Appellant's specification, page 4, line 20 through page 5, line 21).

Claim 13 positively recites:

13. The system according to claim 12, wherein the plurality of multimedia input signals comprise audio signals and the system comprises:  
a receiver (110) for receiving the audio signals;  
a downmixer (122) for downmixing the audio signals; and  
at least one encoder (124) for encoding the downmixed audio signals, wherein the number of encoders is less than the number of audio signals. (See Appellant's specification, page 5, lines 7-17).

Claim 14 positively recites:

14. The system according to claim 13, wherein the plurality of multimedia inputs signals are video signals and audio signals and the system further comprises a multiplexer (120) for multiplexing the video and the audio signals. (See Appellant's specification, page 5, lines 10-17; and page 4, lines 8-10).

Claim 15 positively recites:

15. The system according to claim 14, further comprising:  
a decoder (128, 134) for decoding at least one of the encoded sampled multimedia inputs to provide a decoded signal; and

a processor (132, 136) for processing the decoded signal to enable the display of at least one of the multimedia inputs. (See Appellant's specification, page 5, line 22 through page 6, line 19).

Claim 16 positively recites:

16. The system according to claim 15, further comprising a demultiplexer (126) for demultiplexing the audio and video signals. (See Appellant's specification, page 5, lines 22-23).

Claim 17 positively recites:

17. The system according to claim 16, further comprising a display device for outputting the audio and video signals. (See Appellant's specification, page 6, lines 1-10).

Claim 18 (Cancelled).

Claim 19 positively recites:

19. The system according to claim 12, wherein the number of encoders is less than the number of samplers used for sampling the multimedia input signals. (See Appellant's specification, page 3, lines 14-21; and page 7, lines 1-4).

Claim 20 positively recites:

20. A system for encoding a plurality of multimedia input signals, wherein the multimedia input signals contain video signals and audio signals comprising:

a receiver (110) for receiving the plurality of multimedia input signals, each having at least one respective, different program therein;

at least one sampler (114, 122) for sampling the multimedia input signals such that the sampled multimedia input signals contain a portion of the plurality of multimedia input signals;

a combiner (116, 123) for combining the sampled multimedia input signals;

at least one encoder (118, 124) for encoding the combined multimedia input signals, wherein the number of encoders is less than the plurality of programs;

a multiplexer (120) for multiplexing the video and the audio signals;

a decoder (128, 134) for decoding at least one of the encoded combined multimedia inputs to provide at least one decoded signal;  
a processor (130, 132, 136) for processing the decoded signal to enable the display of at least one of the multimedia inputs;  
a demultiplexer (126) for demultiplexing the audio and video signals;  
a display device for outputting the audio and video signals; and  
a dummy program generator (140) for providing a dummy input to be combined with at least one of the sampled multimedia inputs. (See Appellant's specification, page 4, line 20 through page 6, line 19).

**Grounds of Rejections to be Reviewed on Appeal**

1. Whether the Appellant's claims 1-4, 6-17 and 19 are patentable under 35 U.S.C. § 112, first paragraph.
2. Whether the Appellant's claims 1-3, 6-17, 19 and 20 are patentable under 35 U.S.C. § 103(a) over Tanaka (US Patent No. 5,764,847) in view of Sato et al. (US Patent No. 5,566,174).
3. Whether the Appellant's claim 4 is patentable under 35 U.S.C. § 103(a) over Tanaka (US Patent No. 5,764,847) and Sato et al. (US Patent No. 5,566,174) and further in view of Campbell et al. (US Patent No. 4,967,271).
4. Pending claims 1-3, 6-17, 19 and 20 have been grouped together by the Examiner in their rejection. Appellant urges that each of the rejected claims stands on its own recitation, the claims being considered to be separately patentable for the reasons set forth in more detail *infra*.

**ARGUMENT**

**I. THE EXAMINER ERRED IN REJECTING CLAIMS 1-4, 6-17 and 19 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH BECAUSE THE SUBJECT MATTER OF THE CLAIMS WAS ABSOLUTELY DESCRIBED IN THE SPECIFICATION IN SUCH A WAY AS TO REASONABLY CONVEY TO ONE SKILLED IN THE RELEVANT ART THAT THE INVENTOR(S), AT THE TIME THE APPLICATION WAS FILED, HAD POSSESSION OF THE CLAIMED INVENTION.**

**A. 35 U.S.C. § 112 - Claims 1 and 12**

The Examiner rejected the Appellant's claims 1 and 12 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner alleges that the claims contain subject matter which was not described in the Specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection is respectfully traversed.

More specifically, the Examiner alleges that claims 1 and 12 have been amended to language not existing in the originally filed application such as "improve encoding efficiency". The Appellant respectfully disagrees.

The Appellant respectfully points out that the Appellant in the Specification specifically recites and teaches "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" as claimed in at least the Appellant's claims 1 and 12. More specifically, the Appellant in the Specification specifically recites:

"In one arrangement, a dummy program signal can be generated, which can then be combined with one or more of the incoming sampled video signals to produce a combination of sampled signals in which the combined resolution of the combined signals - including the dummy signal - is equal to that of a D1 signal. A dummy program signal can be a video signal that contains no programming, *i.e.*, a blank picture. As an example, if three D1 signals are received, it may be desired to sample these signals down to 1/4 D1 signals, as the 1/4 D1 format is a conventional format. Notably, however, if three D1 signals are received and sampled down to 1/4

D1, the combined lines of resolution do not equal that of a full D1 signal. Significantly, many video encoders operate more efficiently on video signals with the resolution in a D1 signal. Thus, it may be ***useful to combine a dummy program signal to the 1/4 D1 signals to enable the encoder to operate more efficiently.*** It should be noted, however, that the invention is not limited to this particular example, as a dummy program signal can be added to any suitable number of sampled video signals for purposes of improving video encoder performance. (See Specification, page 9, lines 8-22). (emphasis added).

As clearly evidenced by at least the portion of the Appellant's Specification presented above, the Appellant respectfully submits that the technical feature of at least claim 1 and claim 12, and more specifically "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" is clearly supported throughout the Appellant's Specification and specifically on page 9, lines 8-22.

Therefore, the Appellant respectfully submits that for at least the reasons recited above, claims 1 and 12 fully satisfy the requirements of 35 U.S.C. § 112, first paragraph, and are patentable thereunder.

The Examiner further grouped claims 1-4, 6-14 and 19 together in his 35 U.S.C. § 112, first paragraph, in his rejection. The Appellant respectfully submits that each of the rejected claims stands on its own recitation. However, the Appellant submits that at least because the Appellant's claims 1 and 12 fully satisfy the requirements of 35 U.S.C. § 112, first paragraph, the Appellant further submits that claims 2-4, 6-11, 13-14 and 19, which depend either directly or indirectly from the Appellant's independent claims 1 and 12, also fully satisfy the requirements of 35 U.S.C. § 112, first paragraph, and are patentable thereunder.

**II. THE EXAMINER ERRED IN REJECTING CLAIMS 1-3, 6-17 and 19-20 UNDER 35 U.S.C. § 103(a) BECAUSE THE CITED REFERENCES FAIL TO TEACH, SUGGEST OR MAKE OBVIOUS AT LEAST A METHOD AND SYSTEM FOR RECORDING MULTIPLE PROGRAMS ONTO A STORAGE MEDIUM AND FOR ENCODING A PLURALITY OF MULTIMEDIA INPUT SIGNALS COMPRISING VARIOUS DIFFERENT PROGRAMS INCLUDING AT LEAST "PROVIDING AT LEAST ONE DUMMY INPUT SIGNAL TO BE COMBINED WITH THE SAMPLED MULTIMEDIA INPUTS TO IMPROVE ENCODING EFFICIENCY" AND "COMBINING THE SAMPLED MULTIMEDIA INPUTS AND SAID AT LEAST ONE DUMMY INPUT SIGNAL".**

**A. 35 U.S.C. § 103(a) - Claim 1**

The Examiner rejected claims 1 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka (U.S. Patent 5,764,847) in view of Sato et al. (U.S. Patent 5,566,174, hereinafter "Sato"). The rejection is respectfully traversed.

The Examiner alleges that regarding claim 1, Tanaka teaches all of the aspects of the Appellant's claims except that Tanaka fails to teach providing a dummy input to be combined with at least one of the inputs. As such, the Examiner cites Sato for teaching providing a dummy input to be combined with at least one of the inputs as taught and claimed by the Appellant. The Appellant respectfully disagrees.

The Appellant agrees with the Examiner that Tanaka fails to teach providing a dummy input to be combined with at least one of the inputs, however the Appellant further submits that Tanaka fails to teach, suggest or make obvious other technical features of the Appellant's invention at least with regards to claim 1. More specifically, the Appellant's claim 1 specifically recites:

"A method of recording multiple programs onto a storage medium, comprising the steps of:  
receiving a plurality of multimedia inputs, each having at least one respective, different program therein;

sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs;  
**providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency;**  
combining the sampled multimedia inputs and **said at least one dummy input signal;** and  
encoding the combined multimedia inputs such that the number of encoding devices required to encode the combined multimedia inputs is less than the number of the plurality of programs.” (emphasis added).

The Appellant’s claim 1 and other dependent claims are directed at least in part to a method for recording multiple programs onto a storage medium and systems for encoding a plurality of programs including sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs, each of the multimedia inputs having at least one respective, different program therein, including providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency, combining the sampled multimedia inputs and the at least one dummy input signal and encoding the combined multimedia inputs such that the number of encoding devices required to encode the sampled multimedia inputs is less than the number of the plurality of programs.

In support of the Appellant’s invention, at least as claimed by the Appellant’s independent claim 1 recited above, the Appellant in the Specification, specifically recites:

“As shown in FIG. 1, the encoding path 110 can include one or more samplers 114 for sampling a corresponding number of video signals. These sampled video signals can then be fed to a video combiner 116, which can combine or merge these sampled video signals. Next, these signals can be encoded by the video encoder 118 and then transferred to a multiplexer 120. The encoding path 110 can also contain one or more samplers in the form of downmixers 122 for sampling or downmixing a corresponding number of audio signals. The downmixed audio signals can then be sent to an audio combiner 123, which can combine the downmixed audio signals. These downmixed audio signals can then be encoded by an audio encoder 124 and transferred to the multiplexer 120, which can multiplex the audio and video signals.” (See Appellant’s Specification, page 5, lines 7-17).



And

"Specifically, a plurality of multimedia inputs can be received, and these inputs can be sampled such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs. These sampled multimedia inputs can then be combined and encoded such that the number of encoding devices required to encode the sampled multimedia inputs is less than the number of the plurality of multimedia inputs or alternatively, less than the number of sampling devices used to sample the plurality of multimedia inputs." (See Appellant's Specification, page 6, line 22 through page 7, line 4).

The Appellant, in the Specification, further recites:

"In one arrangement, a dummy program signal can be generated, which can then be combined with one or more of the incoming sampled video signals to produce a combination of sampled signals in which the combined resolution of the combined signals - including the dummy signal - is equal to that of a D1 signal. A dummy program signal can be a video signal that contains no programming, i.e., a blank picture. As an example, if three D1 signals are received, it may be desired to sample these signals down to 1/4 D1 signals, as the 1/4 D1 format is a conventional format.

Notably, however, if three D1 signals are received and sampled down to 1/4 D1, the combined lines of resolution do not equal that of a full D1 signal. Significantly, many video encoders operate more efficiently on video signals with the resolution in a D1 signal. Thus, it may be useful to combine a dummy program signal to the 1/4 D1 signals to enable the encoder to operate more efficiently." (See Appellant's Specification, page 7, lines 11-24).

It is clear from at least the portions of the Appellant's disclosure presented above that various embodiments of the Appellant's invention are directed, at least in part, to a method and systems for recording multiple programs onto a storage medium and for encoding a plurality of multimedia input signals comprising various different programs, including sampling multimedia inputs such that the sampled multimedia inputs contain a portion of a plurality of received multimedia inputs and providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency. That is, as taught and claimed by the Appellant, in the claimed embodiments of the Appellant's invention, a dummy signal is a combined with the sampled signals to enable an encoder to operate more efficiently.

More specifically, the Appellant in the Specification specifically recites:

"In one arrangement, a dummy program signal can be generated, which can then be combined with one or more of the incoming sampled video signals to produce a combination of sampled signals in which the combined resolution of the combined signals - including the dummy signal - is equal to that of a D1 signal. A dummy program signal can be a video signal that contains no programming, *i.e.*, a blank picture. As an example, if three D1 signals are received, it may be desired to sample these signals down to 1/4 D1 signals, as the 1/4 D1 format is a conventional format. Notably, however, if three D1 signals are received and sampled down to 1/4 D1, the combined lines of resolution do not equal that of a full D1 signal. Significantly, many video encoders operate more efficiently on video signals with the resolution in a D1 signal. Thus, it may be ***useful to combine a dummy program signal to the 1/4 D1 signals to enable the encoder to operate more efficiently.*** It should be noted, however, that the invention is not limited to this particular example, as a dummy program signal can be added to any suitable number of sampled video signals for purposes of improving video encoder performance. (See Specification, page 9, lines 8-22). (emphasis added).

As clearly evidenced by at least the portion of the Appellant's Specification presented above, the Appellant respectfully submits that the technical feature of at least claim 1, and more specifically "providing at least one dummy input signal to be combined with the sampled multimedia inputs *to improve encoding efficiency*" is clearly supported throughout the Appellant's Specification and specifically on page 9, lines 8-22.

The Appellant respectfully submits that Tanaka further fails to teach, suggest, disclose or make obvious a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having respective, different programs therein including at least "providing at least one dummy input signal **to be combined with the sampled multimedia inputs to improve encoding efficiency**" and **"combining the sampled multimedia inputs and said at least one dummy input signal"** as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1.

That is, the Examiner concedes that Tanaka fails to disclose providing a dummy input to be combined with at least one of the inputs, however, even further, Tanaka fails to disclose providing a dummy signal to be combined with **"the**

**sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1.**

Instead, Tanaka teaches a digital signal recording apparatus arranged to be capable of permitting long-time recording on one and the same recording medium without impairing the quality of audio signals at all. In Tanaka the apparatus has a first mode in which a digital video signal supplied from a video input circuit and having the amount of information not compressed by a video compression circuit is recorded on the recording medium by a recording circuit while all of n channel digital audio signals supplied from an audio input circuit are recorded by the recording circuit; and a second mode in which the digital video signal having the amount of information compressed by the video compression circuit and only part of the n channel digital audio signals supplied from the audio input circuit are recorded by the recording circuit. (See Tanaka, Abstract).

That is, Tanaka absolutely fails to teach, suggest or anticipate generating or providing a dummy program signal which can then be combined with one or more of the incoming sampled video signals to produce a combination of sampled signals for improving the efficiency of encoding.

As such, the Appellant respectfully submits that the teachings and disclosure of Tanaka fail to teach, suggest or make obvious many more technical features of the Appellant's invention, at least with respect to claim 1, than just providing a dummy input to be combined with at least one of the inputs as conceded by the Examiner.

The Appellant further submits that Sato absolutely fails to bridge the substantial gap between the teachings and disclosure of Tanaka and the Appellant's invention, at least with regards to claim 1.

More specifically, the Examiner cites Sato for teaching that when recording to a tape recording medium, wherein an input having an unknown rate can be varying and/or bursty, providing a means to input dummy data met by a NULL packet generator thereby to process the video to a known rate fixed and constant in order to record to the DVCR. That is, Sato teaches adding NULL packets such that a DVCR

can reconstruct at playback a transport stream without loss of information. In addition, Sato specifically recites:

"...these null packets 49 are used merely to fill gaps in the recording stream and serve no MPEG function." (See Sato, col. 9, lines 30-31).

The Appellant submits that a combination of the teachings of Tanaka and Sato would result in a digital signal recording apparatus arranged to be capable of permitting long-time recording on one and the same recording medium without impairing the quality of audio signals at all, where the apparatus has a first mode in which a digital video signal supplied from a video input circuit and having the amount of information not compressed by a video compression circuit is recorded on the recording medium by a recording circuit while all of n channel digital audio signals supplied from an audio input circuit are recorded by the recording circuit; and a second mode in which the digital video signal having the amount of information compressed by the video compression circuit and only part of the n channel digital audio signals supplied from the audio input circuit are recorded by the recording circuit, where during playback null packets are added to a transport stream such that the recording apparatus can playback a transport stream without loss of information. Moreover, combining the teachings of Sato for adding NULL packets to a transport stream can compromise the invention of Tanaka for a digital video and audio signal recording apparatus which is capable of retaining adequate tone quality even with small amounts of audio information. As such, a combination of the references is not only not suggested in either reference, but also would be considered undesirable by those skilled in the art because combining the references would compromise the functionality of at least the invention of Tanaka.

Even further, the Appellant submits that Sato also absolutely fails to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having respective, different programs therein including at least "providing at least one dummy input signal **to be combined with the sampled multimedia inputs to improve encoding efficiency**" and "**combining the sampled multimedia inputs**

**and said at least one dummy input signal"** as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1. That is, there is no teaching or suggestion in Sato for a dummy input signal to be combined with a plurality of multimedia inputs that have been sampled such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs to improve encoding efficiency. Furthermore, Sato absolutely fails to teach, suggest or make obvious combining the sampled multimedia inputs with the dummy input signal as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 12. Instead, Sato teaches inserting NULL packets such that a DVCR can reconstruct at playback a transport stream without loss of information and fails to teach, suggest, anticipate or make obvious providing dummy signals to be combined with the sampled multimedia inputs to improve encoding efficiency. Even further the Appellant submits that Sato fails to teach, suggest or make obvious at least "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's independent claims. Instead, Sato teaches inserting NULL packets such that a DVCR can reconstruct at playback a transport stream without loss of information and not providing dummy signals to be combined with the sampled multimedia inputs to improve encoding efficiency and Tanaka teaches recombining portions of a single audio or video signal for encoding and is silent regarding combining dummy signals with sampled signals.

As such and for at least the reasons recited above, the Appellant respectfully submits that the combination of the teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest, anticipate or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least

one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's independent claim 1.

Therefore, the Appellant submits that for at least the reasons recited above independent claim 1 is not rendered obvious by the teachings of Tanaka and Sato, alone or in any allowable combination, and, as such, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

B. 35 U.S.C. § 103(a) - Claim 2

Claim 2 depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 2 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fails to teach, suggest or make obvious the Appellant's claim 1 further limited by "comprising the step of playing back the sampled multimedia inputs" as in claim 2.

That is, and for at least the same reasons provided in Section A above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having respective, different programs therein including at least "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 2, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 2, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

C. 35 U.S.C. § 103 - Claim 3

Claim 3 depends directly from claim 2 which depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1 and dependent claim 2, the Appellant respectfully submits that dependent claim 3 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 1 and dependent claim 2. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 1 and 2 further limited by "wherein said playing back step further comprises the steps of: decoding at least one of the encoded sampled multimedia inputs to provide a decoded signal; and processing the decoded signal to enable the display of at least one of the multimedia inputs" as recited in claim 3.

That is, and for at least the same reasons provided in Sections A and B above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, and as further limited by the technical features of claim 2, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 3, which depends directly from claim 2 and indirectly from independent claim 1.

Therefore, the Appellant submits that claim 3, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

D. 35 U.S.C. § 103(a) - Claim 4

Claim 4 depends directly from claim 3 which depends indirectly from claim 2 which depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1 and dependent claims 2 and 3, the Appellant respectfully submits that dependent claim 4 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 1 and dependent claims 2 and 3. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 1, 2 and 3 further limited by "wherein said processing step further comprises the step of upconverting at least one of the sampled multimedia inputs" as recited in claim 4.

That is, and for at least the same reasons provided in Sections A, B and C above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, and as further limited by the technical features of claims 2 and 3, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 4, which depends directly from claim 3 and indirectly from claims 1 and 2.



Therefore, the Appellant submits that claim 4, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

E. 35 U.S.C. § 103(a) - Claim 6

Claim 6 depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 6 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fails to teach, suggest or make obvious the Appellant's claim 1 further limited by "wherein the plurality of multimedia inputs contain multimedia data selected from the group comprising video, audio or a combination thereof" as in claim 6.

That is, and for at least the same reasons provided in Section A above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having respective, different programs therein including at least "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 6, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 6, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

F. 35 U.S.C. § 103(a) - Claim 7

Claim 7 depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 7 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fails to teach, suggest or make obvious the Appellant's claim 1 further limited by "wherein each of the plurality of multimedia inputs contain audio and video" as in claim 7.

That is, and for at least the same reasons provided in Section A above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having respective, different programs therein including at least "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 7, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 7, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

G. 35 U.S.C. § 103(a) - Claim 8

Claim 8 depends directly from claim 6 which depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the

Appellant's independent claim 1 and dependent claim 6, the Appellant respectfully submits that dependent claim 8 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 1 and dependent claim 6. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 1 and 6 further limited by "wherein the multimedia inputs containing video include a D1 video signal and said sampling step further comprises the step of sampling the D1 video signal to a one-half D1 video signal" as recited in claim 8.

That is, and for at least the same reasons provided in Sections A and E above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, and as further limited by the technical features of claim 6, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 8, which depends directly from claim 6 and indirectly from independent claim 1.

Therefore, the Appellant submits that claim 8, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

H. 35 U.S.C. § 103(a) - Claim 9

Claim 9 depends directly from claim 6 which depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1 and dependent claim 6, the Appellant respectfully

submits that dependent claim 9 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 1 and dependent claim 6. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 1 and 6 further limited by "wherein the multimedia inputs containing video include a D1 video signal and said sampling step further comprises the step of sampling the D1 video signal to an SIF video signal" as recited in claim 9.

That is, and for at least the same reasons provided in Sections A and E above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, and as further limited by the technical features of claim 6, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 9, which depends directly from claim 6 and indirectly from independent claim 1.

Therefore, the Appellant submits that claim 9, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

I. 35 U.S.C. § 102(b) - Claim 10

Claim 10 depends directly from claim 6 which depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1 and dependent claim 6, the Appellant respectfully submits that dependent claim 10 is also not rendered obvious and is allowable for at

least the reasons stated above with respect to independent claim 1 and dependent claim 6. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 1 and 6 further limited by "wherein the multimedia inputs containing audio include an audio signal with more than two channels of audio and said sampling step further comprises the step sampling the audio signal to a stereo signal" as recited in claim 10.

That is, and for at least the same reasons provided in Sections A and E above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, and as further limited by the technical features of claim 6, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 10, which depends directly from claim 6 and indirectly from independent claim 1.

Therefore, the Appellant submits that claim 10, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

J. 35 U.S.C. § 103(a) - Claim 11

Claim 11 depends directly from claim 6 which depends directly from independent claim 1 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1 and dependent claim 6, the Appellant respectfully submits that dependent claim 11 is also not rendered obvious and is allowable for at

least the reasons stated above with respect to independent claim 1 and dependent claim 6. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 1 and 6 further limited by "wherein the multimedia inputs containing audio include an audio signal with more than two channels of audio and said sampling step further comprises the step sampling the audio signal to a mono signal" as recited in claim 11.

That is, and for at least the same reasons provided in Sections A and E above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, and as further limited by the technical features of claim 6, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 11, which depends directly from claim 6 and indirectly from independent claim 1.

Therefore, the Appellant submits that claim 11, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

K. 35 U.S.C. § 103(a) - Claim 12

Claim 12 is an independent claim that recites similar relevant features as recited in the Appellant's independent claim 1. More specifically, claim 12 claims a system for encoding a plurality of multimedia input signals having multiple programs including "at least one sampler for sampling the multimedia input signals such that the sampled multimedia input signals contain a portion of the plurality of multimedia input signals, each of said multimedia input signals having at least one respective,

different program therein" and "a dummy signal generator for providing at least one dummy input signal to be combined with at least one of the sampled multimedia inputs to improve encoding efficiency" and "a combiner for combining the sampled multimedia input signals and said at least one dummy input signal" and "at least one encoder for encoding the combined multimedia input signals, wherein the number of encoders is less than the plurality of programs".

As described in section A above, the teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1 and as similarly claimed in the Appellant's independent claim 12. That is, the Appellant respectfully submits that independent claim 12 is also not rendered obvious by Tanaka and Sato, alone or in any allowable combination, and is allowable for at least the reasons stated above with respect to independent claim 1.

Therefore, the Appellant submits that claim 12, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

L. 35 U.S.C. § 103(a) - Claim 13

Claim 13 depends directly from independent claim 12 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 12, the Appellant respectfully submits that dependent claim 13 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 12. The Appellant further submits that Tanaka and Sato, alone or in any

allowable combination, also fail to teach, suggest or render obvious the Appellant's claim 12 further limited by "wherein the plurality of multimedia input signals comprise audio signals and the system comprises: a receiver for receiving the audio signals; a downmixer for downmixing the audio signals; and at least one encoder for encoding the downmixed audio signals, wherein the number of encoders is less than the number of audio signals" as recited in claim 13.

That is, and for at least the same reasons provided in Sections A and K above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 12, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or render obvious the Appellant's invention as claimed in dependent claim 13, which depends directly from independent claim 12.

Therefore, the Appellant submits that claim 13, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

M. 35 U.S.C. § 103(a) - Claim 14

Claim 14 depends directly from claim 13 which depends directly from independent claim 12 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 12 and dependent claim 13, the Appellant respectfully submits that dependent claim 14 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 12 and dependent



claim 13. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 12 and 13 further limited by "wherein the plurality of multimedia inputs signals are video signals and audio signals and the system further comprises a multiplexer for multiplexing the video and the audio signals" as recited in claim 14.

That is, and for at least the same reasons provided in Sections A, K and L above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 12, and as further limited by the technical features of claim 13, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 14, which depends directly from claim 13 and indirectly from independent claim 12.

Therefore, the Appellant submits that claim 14, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

N. 35 U.S.C. § 103(a) - Claim 15

Claim 15 depends directly from claim 14 which depends indirectly from claim 13 which depends directly from independent claim 12 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 1 and dependent claims 13 and 14, the Appellant respectfully submits that dependent claim 15 is also not rendered obvious and is allowable for at least the reasons stated above with

respect to independent claim 12 and dependent claims 13 and 14. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 12, 13 and 14 further limited by "a decoder for decoding at least one of the encoded sampled multimedia inputs to provide a decoded signal; and a processor for processing the decoded signal to enable the display of at least one of the multimedia inputs" as recited in claim 15.

That is, and for at least the same reasons provided in Sections A, K, L and M above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 12, and as further limited by the technical features of claims 13 and 14, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 15, which depends directly from claim 14 and indirectly from claims 12 and 13.

Therefore, the Appellant submits that claim 15, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

O. 35 U.S.C. § 103(a) - Claim 16

Claim 16 depends directly from claim 15 which depends directly from claim 14 which depends directly from claim 13 which depends directly from independent claim 12 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's

independent claim 12 and dependent claims 13, 14 and 15, the Appellant respectfully submits that dependent claim 16 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 12 and dependent claims 13, 14 and 15. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 12, 13, 14 and 15 further limited by "a demultiplexer for demultiplexing the audio and video signals" as recited in claim 16.

That is, and for at least the same reasons provided in Sections A, K, L, M and N above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 12, and as further limited by the technical features of claims 13, 14 and 15, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 16, which depends directly from claim 15 and indirectly from claims 12, 13 and 14.

Therefore, the Appellant submits that claim 16, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

P. 35 U.S.C. § 103(a) - Claim 17

Claim 17 depends directly from claim 16 which depends directly from claim 15 which depends directly from claim 14 which depends directly from claim 13 which depends directly from independent claim 12 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant

with regard to at least the Appellant's independent claim 12 and dependent claims 13, 14, 15 and 16, the Appellant respectfully submits that dependent claim 17 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 12 and dependent claims 13, 14, 15 and 16. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's claims 12, 13, 14, 15 and 16 further limited by "a display device for outputting the audio and video signals" as recited in claim 17.

That is, and for at least the same reasons provided in Sections A, K, L, M, N and O above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 12, and as further limited by the technical features of claims 13, 14, 15 and 16, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or make obvious the Appellant's invention as claimed in dependent claim 17, which depends directly from claim 16 and indirectly from claims 12, 13, 14 and 15.

Therefore, the Appellant submits that claim 17, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Q. 35 U.S.C. § 103(a) - Claim 19

Claim 19 depends directly from independent claim 12 and recites further technical features thereof. At least because teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the invention of the Appellant with regard to at least the Appellant's independent claim 12, the

Appellant respectfully submits that dependent claim 19 is also not rendered obvious and is allowable for at least the reasons stated above with respect to independent claim 12. The Appellant further submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or render obvious the Appellant's claim 12 further limited by "wherein the number of encoders is less than the number of samplers used for sampling the multimedia input signals" as recited in claim 19.

That is, and for at least the same reasons provided in Sections A and K above, at least because Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 12, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest or render obvious the Appellant's invention as claimed in dependent claim 19, which depends directly from independent claim 12.

Therefore, the Appellant submits that claim 19, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

R. 35 U.S.C. § 103(a) - Claim 20

Claim 20 is an independent claim that recites similar relevant features as recited in the Appellant's independent claims 1 and 12. More specifically, claim 20 claims a "system for encoding a plurality of multimedia input signals, wherein the multimedia input signals contain video signals and audio signals comprising: a receiver for receiving the plurality of multimedia input signals, each having at least one respective, different program therein; at least one sampler for sampling the

multimedia input signals such that the sampled multimedia input signals contain a portion of the plurality of multimedia input signals; a combiner for combining the sampled multimedia input signals; at least one encoder for encoding the combined multimedia input signals, wherein the number of encoders is less than the plurality of programs; a multiplexer for multiplexing the video and the audio signals; a decoder for decoding at least one of the encoded combined multimedia inputs to provide at least one decoded signal; a processor for processing the decoded signal to enable the display of at least one of the multimedia inputs; a demultiplexer for demultiplexing the audio and video signals; a display device for outputting the audio and video signals; and a dummy program generator for providing a dummy input to be combined with at least one of the sampled multimedia inputs".

As described in sections A and K above, the teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs" and "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's independent claims 1 and 12 and as similarly claimed in the Appellant's independent claim 20. That is, the Appellant respectfully submits that independent claim 20 is also not rendered obvious by Tanaka and Sato, alone or in any allowable combination, and is allowable for at least the reasons stated above with respect to independent claims 1 and 12.

Therefore, the Appellant submits that claim 20, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

**III. THE EXAMINER ERRED IN REJECTING CLAIM 4 UNDER 35 U.S.C. § 103(a) BECAUSE THE CITED REFERENCES FAIL TO TEACH, SUGGEST OR MAKE OBVIOUS AT LEAST A METHOD AND SYSTEM FOR RECORDING MULTIPLE PROGRAMS ONTO A STORAGE MEDIUM AND FOR ENCODING A PLURALITY OF MULTIMEDIA INPUT SIGNALS COMPRISING VARIOUS DIFFERENT PROGRAMS INCLUDING AT LEAST "PROVIDING AT LEAST ONE DUMMY INPUT SIGNAL TO BE COMBINED WITH THE SAMPLED MULTIMEDIA INPUTS TO IMPROVE ENCODING EFFICIENCY" AND "COMBINING THE SAMPLED MULTIMEDIA INPUTS AND SAID AT LEAST ONE DUMMY INPUT SIGNAL".**

**A. 35 U.S.C. § 103(a) - Claim 1**

The Examiner rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka in view of Sato and further in view of Campbell et al. (U.S. Patent 4,967,271, hereinafter "Campbell"). The rejection is respectfully traversed.

The Examiner states that regarding claim 4, the teachings of Tanaka and Sato fail to teach up-converting at least one of the sampled multimedia inputs. As such the Examiner cites Campbell for teaching the up-converting of the Appellant's claim 4. The Appellant respectfully disagrees.

As recited above and for at least the reasons recited above, the Appellant respectfully submits that the teachings of Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious the Appellant's independent claim 1. As such, the Appellant further submits that the teachings of Tanaka and Sato, alone or in any allowable combination, also fail to teach, suggest, anticipate or make obvious the Appellant's claim 4, which depends indirectly from the Appellant's independent claim 1 and recites additional features therefor.

In addition, the Appellant respectfully submits that the teachings of Campbell fail to bridge the substantial gap between the Appellant's invention and the teachings of Tanaka and Sato. That is, as described above, the Appellant respectfully submits that Tanaka and Sato, alone or in any allowable combination, fail to teach, suggest or make obvious at least a method for recording multiple programs onto a storage

medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1. The Appellant further submits that Campbell also fails to teach, suggest or make obvious at least a method for recording multiple programs onto a storage medium and systems for encoding a plurality of multimedia input signals having multiple programs including at least "providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency" and "combining the sampled multimedia inputs and said at least one dummy input signal" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1.

More specifically, the teachings of Campbell for a Television scan line doubler including temporal median filter fail to bridge the substantial gap between the Appellant's invention and the teachings of Tanaka. The Appellant submits that there is absolutely no teaching or suggestion in Campbell for providing a dummy program signal which can then be combined with one or more of the incoming sampled video signals to produce a combination of sampled signals for improving the efficiency of encoding. For example, the Appellant teaches that in one embodiment of the Appellant's invention, dummy signals are generated and combined with sampled multimedia signals such that the combined resolution of the combined signals - including the dummy signal - is equal to that of a D1 signal.

As such, the Appellant submits that the teachings of Tanaka, Sato and Campbell, alone or in any allowable combination also fail to teach, suggest or make obvious the Appellant's claim 4, which depends indirectly from the Appellant's independent claim 1 and recites additional features thereof.

Therefore, the Appellant submits that claim 4, as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.



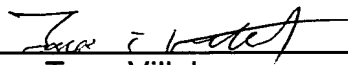
**Conclusion**

Thus, the Appellant submits that none of the claims presently in the application are rendered obvious under the provisions of 35 U.S.C. § 103. The Appellant further submits that all of the Appellant's claims presently in the application are patentable under 35 U.S.C. § 112, first paragraph. Consequently, the Appellant believes all these claims are presently in condition for allowance.

For at least the reasons advanced above, the Appellant respectfully urges that the rejections of claims 1-4, 6-17 and 19 as being unpatentable under 35 U.S.C. § 112, first paragraph and claims 1-4, 6-17 and 19-20 as being rendered obvious under 35 U.S.C. §103 are improper. Reversal of the rejections in this Appeal is respectfully requested.

Respectfully submitted,

06 November '06  
Date

  
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## CLAIMS APPENDIX

1. (Previously Presented) A method of recording multiple programs onto a storage medium, comprising the steps of:

receiving a plurality of multimedia inputs, each having at least one respective, different program therein;

sampling the multimedia inputs such that the sampled multimedia inputs contain a portion of the plurality of multimedia inputs;

providing at least one dummy input signal to be combined with the sampled multimedia inputs to improve encoding efficiency;

combining the sampled multimedia inputs and said at least one dummy input signal; and

encoding the combined multimedia inputs such that the number of encoding devices required to encode the combined multimedia inputs is less than the number of the plurality of programs.

2. (Original) The method according to claim 1, further comprising the step of playing back the sampled multimedia inputs.

3. (Original) The method according to claim 2, wherein said playing back step further comprises the steps of:

decoding at least one of the encoded sampled multimedia inputs to provide a decoded signal; and

processing the decoded signal to enable the display of at least one of the multimedia inputs.

4. (Original) The method according to claim 3, wherein said processing step further comprises the step of upconverting at least one of the sampled multimedia inputs.

5. (Cancelled)

6. (Original) The method according to claim 1, wherein the plurality of multimedia inputs contain multimedia data selected from the group comprising video, audio or a combination thereof.

7. (Original) The method according to claim 1, wherein each of the plurality of multimedia inputs contain audio and video.

8. (Original) The method according to claim 6, wherein the multimedia inputs containing video include a D1 video signal and said sampling step further comprises the step of sampling the D1 video signal to a one-half D1 video signal.

9. (Original) The method according to claim 6, wherein the multimedia inputs containing video include a D1 video signal and said sampling step further comprises the step of sampling the D1 video signal to an SIF video signal.

10. (Original) The method according to claim 6, wherein the multimedia inputs containing audio include an audio signal with more than two channels of audio and said sampling step further comprises the step sampling the audio signal to a stereo signal.

11. (Original) The method according to claim 6, wherein the multimedia inputs containing audio include an audio signal with more than two channels of audio and said sampling step further comprises the step sampling the audio signal to a mono signal.

12. (Previously Presented) A system for encoding a plurality of multimedia input signals having multiple programs, comprising:

at least one sampler for sampling the multimedia input signals such that the sampled multimedia input signals contain a portion of the plurality of multimedia input signals, each of said multimedia input signals having at least one respective, different program therein;

a dummy signal generator for providing at least one dummy input signal to be combined with at least one of the sampled multimedia inputs to improve encoding efficiency;

a combiner for combining the sampled multimedia input signals and said at least one dummy input signal; and

at least one encoder for encoding the combined multimedia input signals, wherein the number of encoders is less than the plurality of programs.

13. (Original) The system according to claim 12, wherein the plurality of multimedia input signals comprise audio signals and the system comprises:

a receiver for receiving the audio signals;

a downmixer for downmixing the audio signals; and

at least one encoder for encoding the downmixed audio signals, wherein the number of encoders is less than the number of audio signals.

14. (Original) The system according to claim 13, wherein the plurality of multimedia inputs signals are video signals and audio signals and the system further comprises a multiplexer for multiplexing the video and the audio signals.

15. (Original) The system according to claim 14, further comprising:

a decoder for decoding at least one of the encoded sampled multimedia inputs to provide a decoded signal; and

a processor for processing the decoded signal to enable the display of at least one of the multimedia inputs.

16. (Original) The system according to claim 15, further comprising a demultiplexer for demultiplexing the audio and video signals.

17. (Original) The system according to claim 16, further comprising a display device for outputting the audio and video signals.

18. (Cancelled)

19. (Original) The system according to claim 12, wherein the number of encoders is less than the number of samplers used for sampling the multimedia input signals.

20. (Previously Presented) A system for encoding a plurality of multimedia input signals, wherein the multimedia input signals contain video signals and audio signals comprising:

- a receiver for receiving the plurality of multimedia input signals, each having at least one respective, different program therein;

- at least one sampler for sampling the multimedia input signals such that the sampled multimedia input signals contain a portion of the plurality of multimedia input signals;

- a combiner for combining the sampled multimedia input signals;

- at least one encoder for encoding the combined multimedia input signals, wherein the number of encoders is less than the plurality of programs;

- a multiplexer for multiplexing the video and the audio signals;

- a decoder for decoding at least one of the encoded combined multimedia inputs to provide at least one decoded signal;

- a processor for processing the decoded signal to enable the display of at least one of the multimedia inputs;

- a demultiplexer for demultiplexing the audio and video signals;

- a display device for outputting the audio and video signals; and

- a dummy program generator for providing a dummy input to be combined with at least one of the sampled multimedia inputs.

### **EVIDENCE APPENDIX**

Appellant asserts that there is no evidence to be submitted in accordance with this section.

**RELATED PROCEEDINGS APPENDIX**

Appellant asserts that there are no copies of decisions to be submitted in accordance with this section.